Amendments to the Claims

This listing of claims is intended to replace all prior versions and listings of claims in the above-identified application.

1. (Currently amended) A method of inducing B cell apoptosis comprising:

contacting a B cell with ~~a polyclonal anti-thymocyte serum or~~ at least one of a plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, that bind to a B cell surface marker selected from the group of CD27, CD30, CD32, CD38, CD95, CD138, HLA-DR, HLA-A, HLA-B, and HLA-C, ~~markers~~ under conditions effective to induce apoptosis of the contacted B cell.

2. (Original) The method according to claim 1 wherein the B cell is selected from the group of immature B cells, naïve B cells, activated B cells, memory B cells, blastic B cells, and plasma B cells.

3. (Original) The method according to claim 1 wherein the B cell is a $CD19^{+}$ peripheral blood B cell, CD40L activated B cell plasmablast, and/or normal human plasma cell.

4-6. (Cancelled)

7. (Currently amended) The method according to claim 1 ~~6~~ wherein the monoclonal antibodies are humanized monoclonal antibodies or fragments thereof.

8. (Currently amended) The method according to claim 1 ~~6~~ wherein the plurality of monoclonal antibodies comprise two or more antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof that bind to different cell surface markers~~, that recognize a B cell surface marker selected from the group of CD16, CD19, CD20, CD27, CD30, CD32, CD38, CD40, CD45, CD80, CD86, CD95, CD138, HLA-A, HLA-B, HLA-C, HLA-DR, HLA-DQ, HLA-DP, MHC Class I, MHC Class II, sIgG, sIgM, sIgD, sIgE, and sIgA, hyaluronic acid receptor, alpha interferon receptor, Ig Kappa or lambda light chain, Ig heavy chain, and TNF proteins~~.

9. (Original) The method according to claim 1 wherein the B cell is *in vitro*.

10. (Original) The method according to claim 1 wherein the B cell is *in vivo*.

11. (Currently Amended) A method of inducing apoptosis in myeloma cells comprising:

contacting a myeloma cell with ~~a polyclonal anti-thymocyte serum or~~ at least one of a plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, that bind to a myeloma cell surface marker selected from the group of CD30, CD32, CD38, CD95, CD138, HLA-A, HLA-B, and HLA-C, under conditions effective to induce myeloma cell apoptosis.

12-14. (Cancelled)

15. (Currently Amended) The method according to claim 11 ~~14~~ wherein the monoclonal antibodies are humanized monoclonal antibodies or fragments thereof.

16. (Currently Amended) The method according to claim 11 ~~14~~ wherein the plurality of monoclonal antibodies or ~~effective~~ binding fragments thereof comprise two or more antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, that bind to different cell surface markers~~, that recognize a myeloma cell surface marker selected from the group of CD16, CD19, CD20, CD27, CD30, CD32, CD38, CD40, CD45, CD80, CD86, CD95, CD138, HLA-A, HLA-B, HLA-C, HLA-DR, HLA-DQ, HLA-DP, MHC Class I, MHC Class II, sIgG, sIgM, sIgD, sIgE, and sIgA, hyaluronic acid receptor, alpha interferon receptor, Ig Kappa or lambda light chain, Ig heavy chain, and TNF proteins~~.

17. (Currently Amended) The method according to claim 11 ~~14~~ wherein the myeloma cell is $CD138^{+}$.

18. (Original) The method according to claim 11 wherein the myeloma cell is *in vitro*.

19. (Original) The method according to claim 11 wherein the myeloma cell is *in vivo*.

20. (Currently Amended) A method of treating multiple myeloma comprising:

providing either (i) an agent consisting of a polyclonal anti-thymocyte serum or (ii) at least one of a plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~

thereof, that bind to a myeloma cell surface marker selected from the group of CD30, CD32, CD38, CD95, CD138, HLA-A, HLA-B, and HLA-C; and

administering to a patient experiencing multiple myeloma and comprising myeloma cells an amount of (i) or (ii) that is effective to destroy myeloma cells, thereby treating the multiple myeloma condition.

21. (Currently Amended) The method according to claim 20 wherein said method is carried out using the agent consisting of the ~~a~~ polyclonal anti-thymocyte serum.

22. (Original) The method according to claim 21 wherein the polyclonal anti-thymocyte serum is from a primate or pig.

23. (Currently Amended) The method according to claim 20 wherein said method is carried out using at least one of a plurality of monoclonal antibodies or ~~effective~~ binding fragments ~~or variants~~ thereof.

24. (Original) The method according to claim 23 wherein the monoclonal antibodies are humanized monoclonal antibodies or fragments thereof.

25. (Currently Amended) The method according to claim 23 wherein the plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, comprise two or more antibodies, or binding fragments thereof, that bind to different cell surface markers ~~that recognize a myeloma cell surface marker selected from the group of CD16, CD19, CD20, CD27, CD30, CD32, CD38, CD40, CD45, CD80, CD86, CD95, CD138, HLA-A, HLA-B, HLA-C, HLA-DR, HLA-DQ, HLA-DP, MHC Class I, MHC Class II, sIgG, sIgM, sIgD, sIgE, and sIgA, hyaluronic acid receptor, alpha interferon receptor, Ig Kappa or lambda light chain, Ig heavy chain, and TNF proteins~~.

26. (Original) The method according to claim 20 wherein said administering is carried out orally, parenterally, subcutaneously, transdermally, intravenously, intramuscularly, intraperitoneally, by intranasal instillation, by implantation, by intracavitary or intravesical instillation, intraocularly, intraarterially, intralesionally, by application to mucous membranes.

27. (Original) The method according to claim 20 further comprising:

periodically repeating said administering.

28. (Currently Amended) A method of treating a B cell or plasma cell-related autoimmune disorder comprising:

providing ~~either (i) a polyclonal anti-thymocyte serum or (ii)~~ at least one of a plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, that bind to a B cell or plasma cell surface marker selected from the group of CD27, CD30, CD38, CD95, and HLA-DR; and

administering to a patient experiencing a B cell or plasma cell-related autoimmune disorder an amount of the at least one monoclonal antibody or binding fragment thereof ~~(i) or (ii)~~ that is effective to destroy B cells or plasma cells responsible for the autoimmune disorder, thereby treating the B cell or plasma cell-related autoimmune disorder.

29-31. (Cancelled)

32. (Currently Amended) The method according to claim 28 ~~31~~ wherein the monoclonal antibodies are humanized monoclonal antibodies or binding fragments ~~or variants~~ thereof.

33. (Currently Amended) The method according to claim 28 ~~31~~ wherein the plurality of monoclonal antibodies, or binding ~~effective~~ fragments thereof, comprise two or more antibodies, or binding fragments thereof, that bind to different cell surface markers ~~that recognize a B cell or plasma cell surface marker selected from the group of CD16, CD19, CD20, CD27, CD30, CD32, CD38, CD40, CD45, CD80, CD86, CD95, CD138, HLA-A, HLA-B, HLA-C, HLA-DR, HLA-DQ, HLA-DP, MHC Class I, MHC Class II, sIgG, sIgM, sIgD, sIgE, and sIgA, hyaluronic acid receptor, alpha interferon receptor, Ig Kappa or lambda light chain, Ig heavy chain, and TNF proteins~~.

34. (Original) The method according to claim 28 wherein administering is carried out orally, parenterally, subcutaneously, transdermally, intravenously, intramuscularly, intraperitoneally, by intranasal instillation, by implantation, by intracavitary or intravesical instillation, intraocularly, intraarterially, intralesionally, by application to mucous membranes.

35. (Original) The method according to claim 28 further comprising:

periodically repeating said administering.

36. (Original) The method according to claim 28 wherein the B cell or plasma cell-related autoimmune disorder is selected from the group of: systemic lupus erythematosus, Rheumatoid arthritis, diabetis, Sjogren's syndrome, Hashimoto's disease, Wegner's granulomatosis, polyarteritis nodosum, anti-cardiolipin antibody syndrome, autoimmune hepatitis, and B cells cancers of the immune system.

37. (Currently Amended) A method of treating a patient for a B cell malignancy comprising:

providing ~~either (i) a polyclonal anti-thymocyte serum or (ii)~~ at least one of a plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, that bind to a malignant B cell surface marker selected from the group of CD30, CD32, CD38, CD95, CD138, HLA-A, HLA-B, and HLA-C; and

administering to a patient experiencing a B cell malignancy an amount of ~~(i) or (ii)~~ the at least one monoclonal antibody or binding fragment thereof that is effective to destroy malignant B cells, thereby treating the patient for the B cell malignancy.

38-40. (Cancelled)

41. (Original) The method according to claim 37 wherein the monoclonal antibodies are humanized monoclonal antibodies or fragments thereof.

42. (Currently Amended) The method according to claim 37 wherein the plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, comprise two or more antibodies or binding fragments thereof that bind to different cell surface markers ~~that recognize a myeloma cell surface marker selected from the group of CD16, CD19, CD20, CD27, CD30, CD32, CD38, CD40, CD45, CD80, CD86, CD95, CD138, HLA-A, HLA-B, HLA-C, HLA-DR, HLA-DQ, HLA-DP, MHC Class I, MHC Class II, sIgG, sIgM, sIgD, sIgE, and sIgA, hyaluronic acid receptor, alpha interferon receptor, Ig Kappa or lambda light chain, Ig heavy chain, and TNF proteins~~.

43. (Original) The method according to claim 37 wherein said administering is carried out orally, parenterally, subcutaneously, transdermally, intravenously, intramuscularly, intraperitoneally, by intranasal instillation, by implantation, by intracavitary or intravesical instillation, intraocularly, intraarterially, intralesionally, by application to mucous membranes.

44. (Original) The method according to claim 37 further comprising:

periodically repeating said administering.

45. (Currently Amended) A method of treating B cell or plasma cell-related alloantibody disorders in solid organ or bone marrow transplantation recipients, said method comprising:

providing ~~either (i) a polyclonal anti-thymocyte serum or (ii)~~ at least one of a plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, that bind to a B cell or plasma cell surface marker on B cells or plasma cells that are implicated in an alloantibody disorder, the surface marker being selected from the group of CD27, CD30, CD38, CD95, and HLA-DR; and

administering to a solid organ or bone marrow transplant patient experiencing a B cell or plasma cell-related alloantibody ~~autoimmune~~ disorder an amount of the at least one monoclonal antibody or binding fragment thereof ~~(i) or (ii)~~ that is effective to destroy B cells or plasma cells responsible for the alloantibody ~~autoimmune~~ disorder, thereby treating the B cell or plasma cell-related alloantibody disorder.

46-48. (Cancelled)

49. (Currently Amended) The method according to claim 45 ~~46~~ wherein the monoclonal antibodies are humanized monoclonal antibodies or fragments thereof.

50. (Currently Amended) The method according to claim 45 wherein the plurality of monoclonal antibodies, or ~~effective~~ binding fragments ~~or variants~~ thereof, comprise two or more antibodies, or binding fragment thereof, that bind to different cell surface markers ~~that recognize a myeloma cell surface marker selected from the group of CD16, CD19, CD20, CD27, CD30, CD32, CD38, CD40, CD45, CD80, CD86, CD95, CD138, HLA-A, HLA-B, HLA-C, HLA-DR, HLA-DQ, HLA-DP, MHC Class I, MHC Class II, sIgG, sIgM, sIgD, sIgE, and sIgA,~~

~~hyaluronic acid receptor, alpha interferon receptor, Ig Kappa or lambda light chain, Ig heavy chain, and TNF proteins~~.

51. (Original) The method according to claim 45 wherein said administering is carried out orally, parenterally, subcutaneously, transdermally, intravenously, intramuscularly, intraperitoneally, by intranasal instillation, by implantation, by intracavitary or intravesical instillation, intraocularly, intraarterially, intralesionally, by application to mucous membranes.

52. (Original) The method according to claim 45 further comprising:

periodically repeating said administering.

53. (Currently Amended) A composition comprising two or more monoclonal antibodies or binding fragments ~~or variants~~ thereof that are effective in binding to a B cell or plasma cell surface marker selected from the group of CD27, CD30, CD32, CD38, CD95, CD138, HLA-DR, HLA-A, HLA-B, and HLA-C, and either individually or collectively inducing apoptosis to the bound cell.

54. (Cancelled)

55. (Currently Amended) The composition according to claim 53 wherein the monoclonal antibodies or fragments or variants thereof are humanized monoclonal antibodies or binding fragments thereof.

56. (Currently Amended) The composition according to claim 53 comprising three or more monoclonal antibodies or binding fragments ~~or variants~~ thereof.